

Focus Report
New Chemicals Program
PMN Number: **P-05-0286**

Focus Date: 03/10/2005 12:00:00 AM Report Status: InProgress
Consolidated Set:
Focus Chair: A. Binder Contractor: TKP

I. Notice Information

Submitter: XXXXXXXXXX CAS Number:
Chemical Name:
Use: Hydraulic fracturing additive
Other Uses: Awaiting ISIS Entry
PV-Max: 100,000 Kg/yr
Manufacture: X Import:

Production Volume other information:

II. SAT Results

(1) Health Rating: 1-2 Eco Rating: 2 Comments: ;

Additional SAT information:

Occupational: 1 Non-Occupational: 1 Environmental:

(1) PBT:			Comments:
Awaiting Fate Entry	Awaiting Fate Entry	Awaiting Human Health Entry	Awaiting Fate Entry
Awaiting Fate Entry	Awaiting Fate Entry	Awaiting Human Health Entry	Awaiting Fate Entry
Awaiting Fate Entry	Awaiting Fate Entry	Awaiting Human Health Entry	Awaiting Fate Entry

III. OTHER FACTORS

Categories:

Health Chemical Category: Ecotox SAR and TSCA New Chemical Category: ; Anionic Surfactants,

Related Cases/Regulatory History:

Health related Cases:
Ecotox Related Cases:
Regulatory History: XXXXXXXXXX FOCUS DROP

MSDS/Label Information:

MSDS: Yes

Exposure Based Information:

Exposure Based Review:	Exposure Based Review (Health):
Exposure Based Review (Eco):	Exposure Based (Occupational): No
Exposure Based Review (Non Occupational):	Exposure Based (Environmental):

IV. Summary of SAT Assessment

Legacy SAT assessment: CASE NUMBER: P05-0286

FATE: Solid

LogKow = 3.78(E); S (mg/L, 25°C) = 16.7(E); H = 5.00E-8(E)

MP (C) = 65(E); BP (C) = 344(E); VP @ 25C (mm) = 3.2E-6(E)

LogKoc = 2.71(E); LogBCF = 2.21(E);

POTW removal (%) = 90 via sorption and biodeg

Time for complete ultimate aerobic biodeg = wk-mo

PBT Potential: P1B1T1

Sorption to soils/sediments = v.strong

HEALTH: Poor absorption from the skin and GI tract, moderate absorption from the lung (analog). Absorption is poor from the skin, moderate from the GI tract, and good from the lung (analog). Concern for surfactant effects on the lung; irritation to eye, skin (chronic), mucous membranes and lung based on surfactant properties of the compounds.

ECOTOX: Predicted (P) and measured (M) toxicity values in mg/L (ppm) are:

fish 96-h LC50 > 1.4 P

daphnid 48-h LC50 > 4.6 P

green algal 96-h EC50 c > 34.0 P

fish chronic value > 0.200 P

daphnid ChV > 0.700 P

algal ChV c > 5.0 P

Predictions are based on SAR-nearest analog method for alkyl phosphate anionic surfactants [REDACTED] alkyl hydrophobe; SAR chemical class = surfactant-anionic-phosphate [REDACTED]; [REDACTED] solid (P); log Kow for the free acid = 3.8 (EPI); S = 17 mg/L at 20 C for the free acid (P), dispersible at pH 7 with a soluble salt (RAD); pH7; effective concentrations based on 100% active ingredients and mean measured concentrations; hardness <150.0 mg/L as CaCO3; and TOC <2.0 mg/L;

moderate concern for toxicity;

assessment factor = 10.0

concern concentration = 0.020 mg/L (ppm)

Fate:

Fate Summary:

Health:

Health Summary:

Ecotox:

Ecotox Values:

Fish 96-h LC50:

Daphnid 48-h LC50:

Green algal 96-h EC50:

Fish Chronic Value:

Daphnid ChV:

Algal ChV:

Ecotox Factors:

Assessment Factor:

Concern Concentration:

- Acute Value

Concern Concentration:

- Chronic Value

Legacy summary of exposures and releases: Manu:

1 site, < 3 workers, 11 d/yr

Inhal: negligible

Dermal: 1000 mg/d (liquid - [REDACTED])

Releases to water: 33 kg/s/d, 11 d/yr

Releases to landfill: 200 kg/yr

OR

Releases via incineration: 200 kg/yr

Releases to air: 2.0 kg/d, 11 d/yr

Fate: Releases to water (90% removal efficiency)

SWC: 1.26 ppb

DW:LADD: 8.65×10^{-8} mg/kg/d, ADD: 2.16×10^{-7} mg/kg/d, ADR: 7.50×10^{-5} mg/kg/d

Fish:LADD: 6.01×10^{-8} mg/kg/d, ADD: 1.50×10^{-7} mg/kg/d, ADR: 1.07×10^{-4} mg/kg/d

>COC (20 ppb): no exceedance

Fate: Releases to air

LADD: 8.09×10^{-6} mg/kg/d, ADD: 2.02×10^{-5} mg/kg/d

Fate: Releases via incineration

LADD: 4.41×10^{-11} mg/kg/d, ADD: 1.10×10^{-10} mg/kg/d

Use:

125 sites, 16 workers, 1 d/yr

Inhal: negligible

Dermal: 1000 mg/d (liquid - XXXXXXXXXX)

Releases to water: not expected

V. Summary of Exposures/Releases

Engineering Summary:

Exposures/Releases			
Scenario			
Sites			
Media			
Descriptor A			
Quantity A (kg/site/day)			
Frequency A (day/year)			
Descriptor B			
Quantity B (kg/site/day)			
Frequency B (day/year)			
From			
Workers			
Exposure Type			

VI. Focus Decision and Rationale

Regulatory Actions

Regulatory Decision: Drop

Decision Date: 03/10/2005

Type of Decision:

Rationale: P05-0286 was dropped from further review. Potential risks to human health were addressed by adequate dermal protection, negligible inhalation exposures, and adequate warnings in the MSDS. Potential risks to the environment were low based on no exceedance of the 20 ppb COC. This was an exposure-based review, however, no CEB or EAB exposure-based criteria were met.

P2 Rec Comments:

Testing:

Final Recommended:

Health:

Eco:

Fate:

Other:

STRUCTURE ACTIVITY TEAM REPORT ver. 04/98

Case #: P-05-0286

DCN:

SAT Date: 2/15/2005

SAT Chair: L. Keifer

Submitter:

Chemical Name:

RECEIVED
OPT OIC
2005 MAR 23 PM 3:39

CAS RN:

Structure

Molecular Formula:

Molecular Wt.:

WT%<500:

WT%<1000:

MP:

BP:

344.3

Eq. Wt:

H2O Sol (g/L):

0.0167

V.P.

<0.000001

Max. Prod. Volume (kg/yr):

100000

Physical State:

Solid (Est)

USE:

Hydraulic fracturing additive (oil gellant) to provide viscosity under pressure by creating a three-dimensional micellar network to be used to fracture crude oil well formations by enhancing the permeability of the well formation and increase the flow of crude oil.

5 references were found in CA. Of these, 4 are patents. All 4 patented CA references have a similar use. For an example, see CA 141:142971.

Related Case Numbers	Case Role	Related Case Numbers	Case Role
P04-806			

Focus Date: MAR 10 2005

Results:

DROP
Page 1 of 5

STRUCTURE ACTIVITY TEAM REPORT

02/15/05

CASE NUMBER: P05-0286

RELATED CASES:

CONCLUSIONS/DISCUSSIONS

TYPE OF CONCERN:

HEALTH

ECOTOX

LEVEL OF CONCERN:

1-2

2

KEYWORDS: LUNG IRR-E,S,MM
AQUATOX

SUMMARY OF ASSESSMENT

FATE: Solid

LogKow = 3.78(E); S (mg/L, 25°C) = 16.7(E); H = 5.00E-8(E)

MP (C) = 65(E); BP (C) = 344(E); VP @ 25C (mm) = 3.2E-6(E)

LogKoc = 2.71(E); LogBCF = 2.21(E);

POTW removal (%) = 90 via sorption and biodeg

Time for complete ultimate aerobic biodeg = wk-mo

PBT Potential: P1B1T1

Sorption to soils/sediments = v.strong

*CEB FATE: Migration to ground water = negl

HEALTH: Poor absorption from the skin and GI tract, moderate absorption from the lung (analog). Concern for surfactant effects on the lung; irritation to eye, skin (chronic), mucous membranes and lung based on surfactant properties of the compounds.

*CEB HEALTH: Low moderate concern (Dermal, inhalation); XB: Testing desired

ECOTOX: Predicted (P) and measured (M) toxicity values in mg/L (ppm) are:

fish 96-h LC50 > 1.4 P

daphnid 48-h LC50 > 4.6 P

green algal 96-h EC50 c > 34.0 P

fish chronic value > 0.200 P

daphnid ChV > 0.700 P

algal ChV c > 5.0 P

Predictions are based on SAR-nearest analog method for alkyl phosphate anionic surfactants with [REDACTED] alkyl hydrophobe; SAR chemical class = surfactant-anionic-phosphate-[REDACTED]; [REDACTED]; solid (P); log Kow for the free acid = 3.8 (EPI); S = 17 mg/L at 20 C for the free acid (P), dispersible at pH 7 with a soluble salt (RAD); pH7; effective concentrations based on 100% active ingredients and mean measured concentrations; hardness <150.0 mg/L as CaCO3; and TOC <2.0 mg/L; moderate concern for toxicity;

assessment factor = 10.0
concern concentration = 0.020 mg/L (ppm)
*CEB ECOTOX: All releases to water with CC = 20 ppb; XB:
Testing desired.

SAT Co-chair: Leonard Keifer 564-8916

NCSAB SAT REPORT

PMN:

P-05-0286

CAS RN:

Chemical Name:

Analog:

Production Volume: 100000.00

Structure:

Hydraulic fracturing additive (oil gellant) to provide viscosity under pressure by creating a three-dimensional micellar network to be used to fracture crude oil well formations by enhancing the permeability of the well formation and increase the flow of crude oil.

5 references were found in CA. Of these, 4 are patents. All 4 patented CA references have a similar use. For an example, see [redacted]

Formula:

Eq Wt:

Mol Weight:

Wt% < 500:

Wt% < 1000

MP:

BP:

344.3

VP:

< 0.000001

H2O Sol (g/L):

17.

0.0167

Physical State:

Solid (Est)

Log P: 3.8 (E)

Endpoint (mg/L)	Est. Value	Meas. Value	Comments
Fish 96-h	1.4		
Daphnid 48-h	4.6		
Algal 96-h	34		
Fish ChV	0.14		
Daphnid ChV	0.46		
Algal ChV	5.0		
BCF			

CHEMICAL CLASS:

SAR:

ECOTOX CONCERN

H

(M)

L

CONCERN CONCENTRATION

0.014

DATE

2/15/05

ASSESSOR: